

FIG. 1

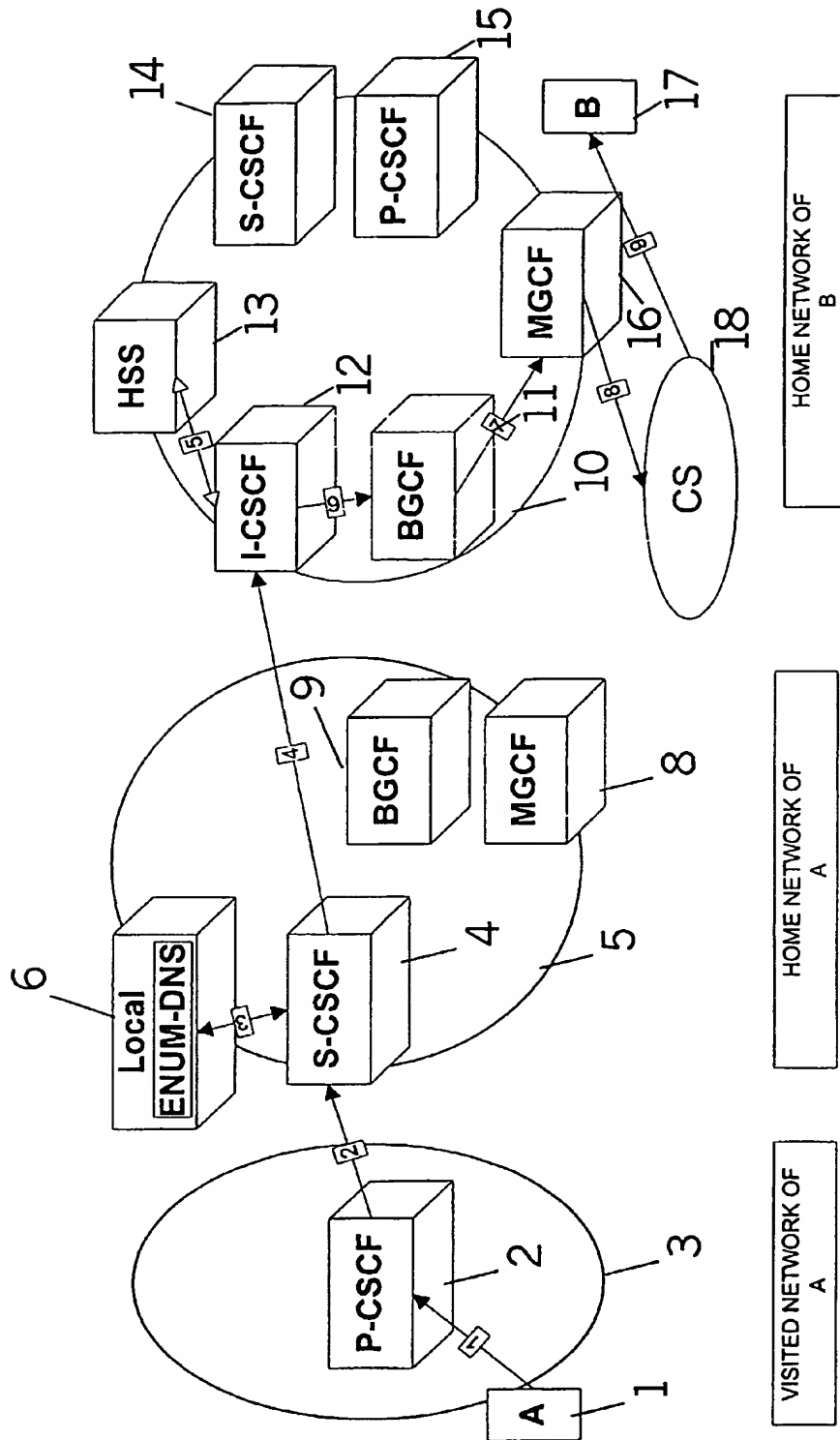


FIG. 2

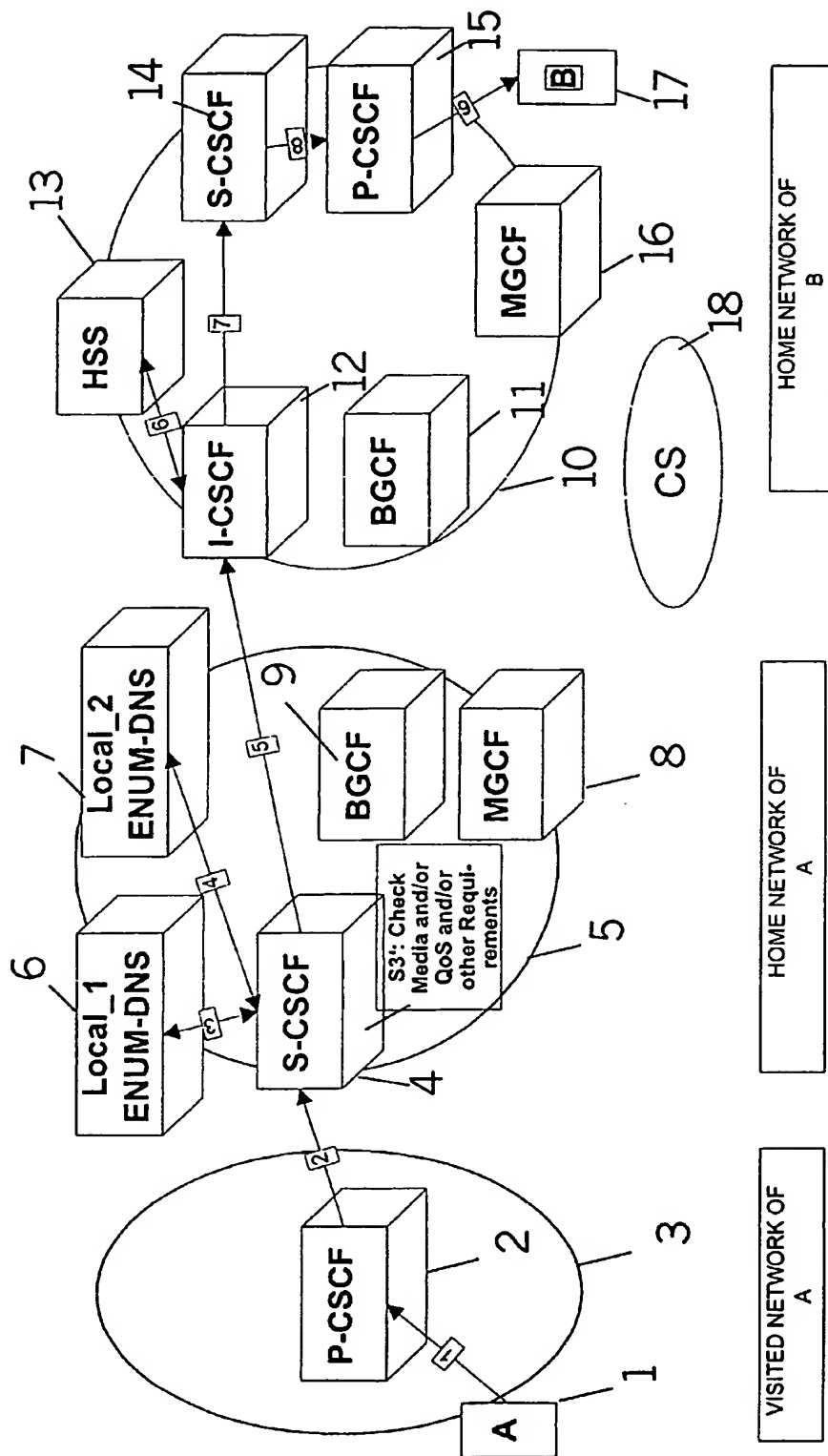
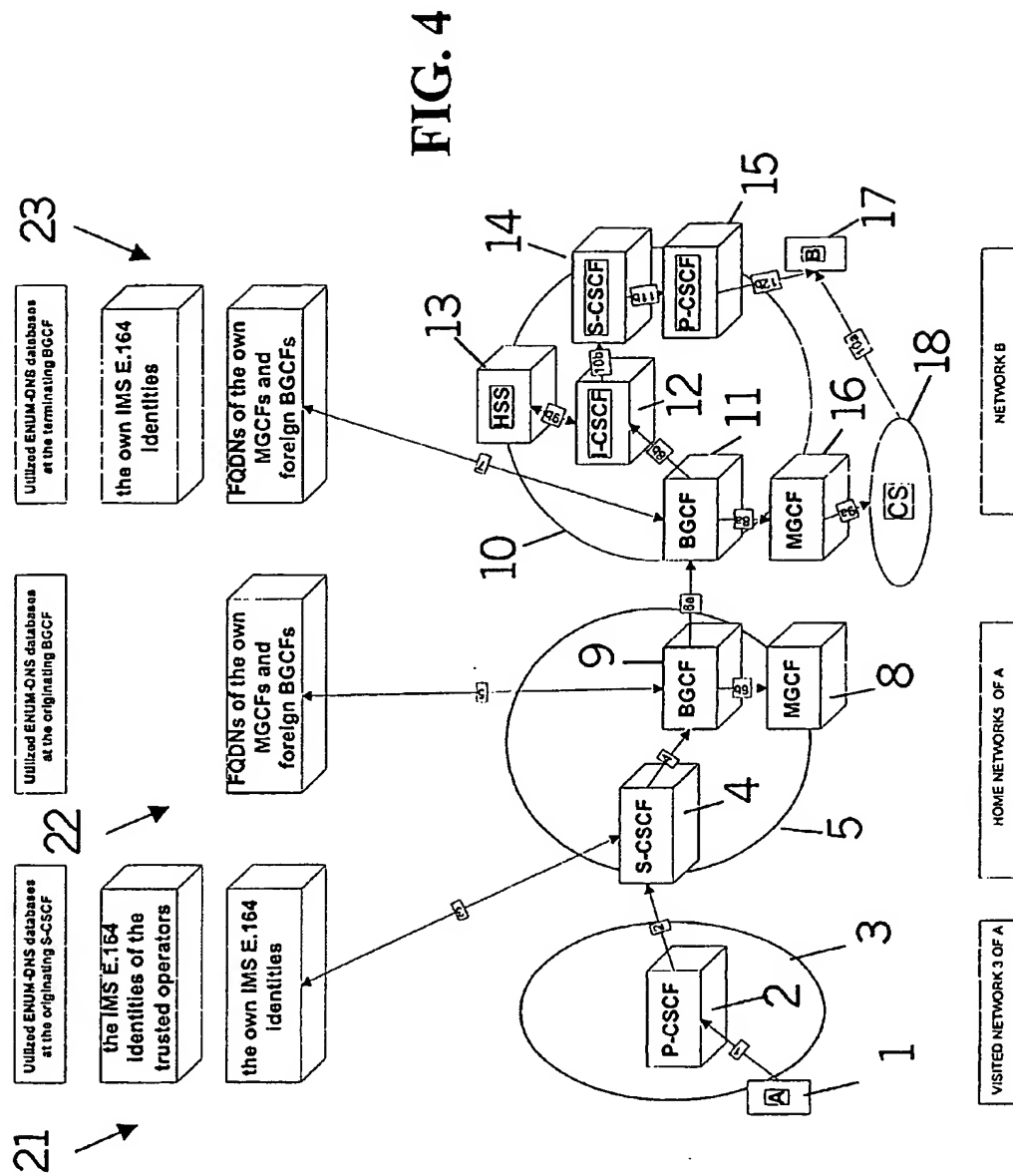


FIG. 3



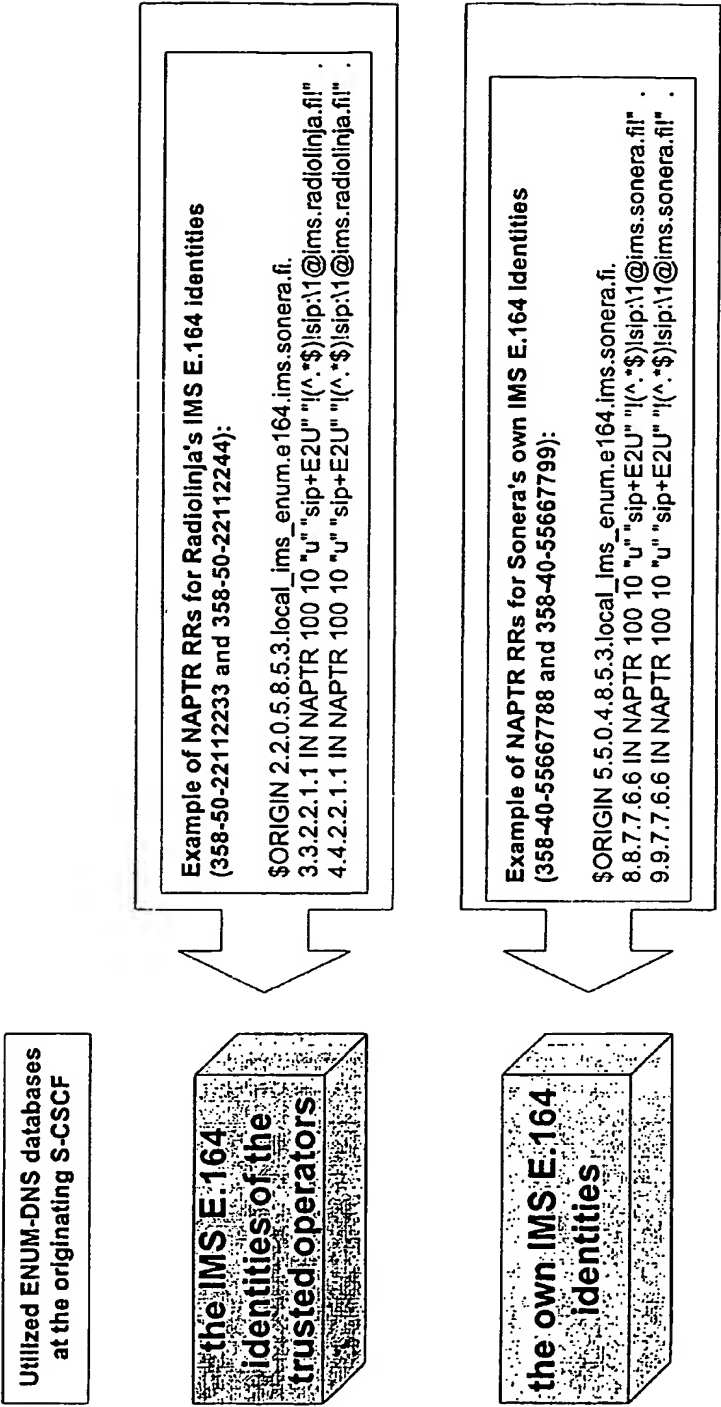


FIG. 5

Utilized ENUM-DNS databases  
at the originating BGCF

FQDNs of the own  
MGCFs and  
foreign BGCFs

Example of NAPTR RRs for routing to Sonera's own MGCFs and Radiolinja's BGCF

(358-40-56xxxxxx to Sonera's MGCF1):

(358-40-4xxxxxxx to Sonera's MGCF2):

(358-50-xxxxxxx to Radiolinja's BGCF): Bare prefix can be used because IMS E.164 messages and/or sets of messages and/or sessions (i.e. +358-50-22xxxxxx) are already routed from the originating S-CSCF to Radiolinja's I-CSCF.

\$ORIGIN 6.5.0.4.8.5.3.local\_routing\_enum.e164.lms.sonera.fi.  
• IN NAPTR 100 10 "u" "sip+E2U" "(^,\$)" sip:11@mgcf1.lms.sonera.fi".  
\$ORIGIN 4.0.4.8.5.3.local\_routing\_enum.e164.lms.sonera.fi.  
• IN NAPTR 100 10 "u" "sip+E2U" "(^,\$)" sip:11@mgcf2.lms.sonera.fi".  
\$ORIGIN 0.5.8.5.3.local\_routing\_enum.e164.lms.sonera.fi.  
• IN NAPTR 100 10 "u" "sip+E2U" "(^,\$)" sip:11@bgcf.lms.radiolinja.fi".

FIG. 6

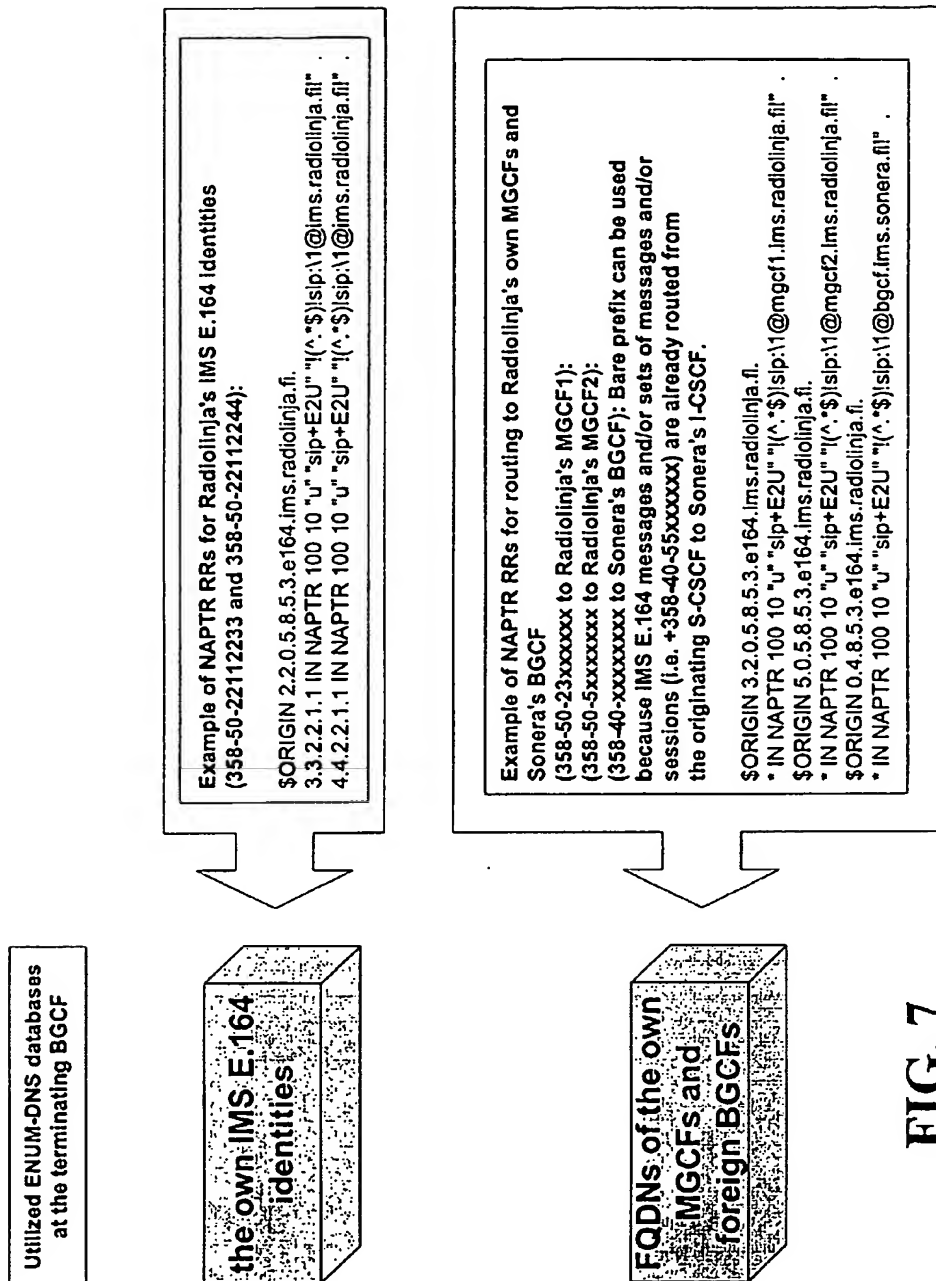
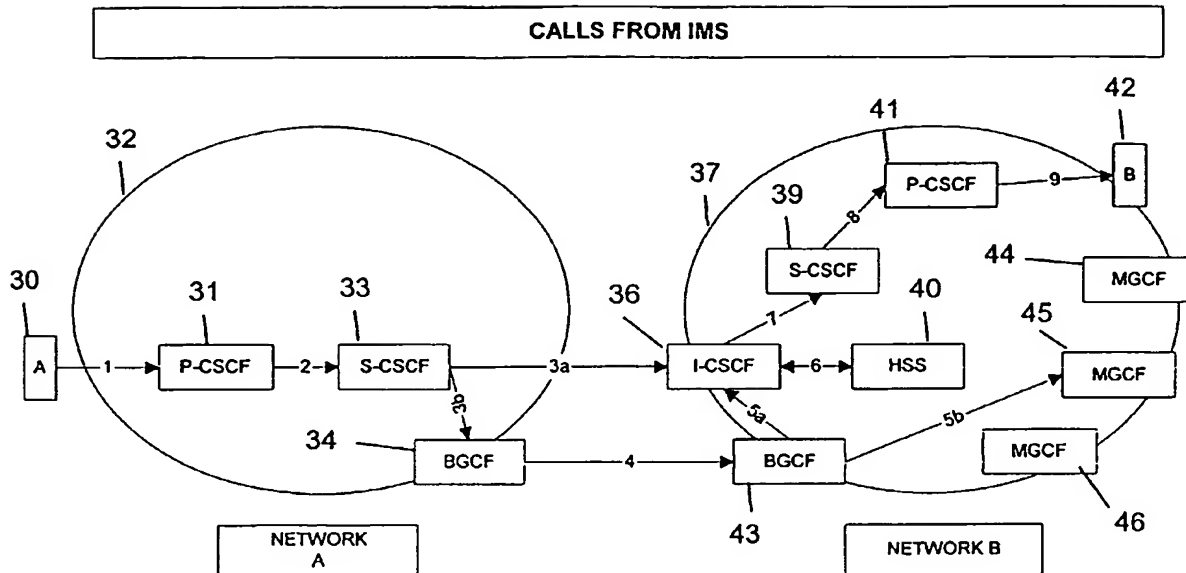


FIG. 7

## E.164 routing within IMS

**ROUTING with logical name:**

1  
2  
3a  
6  
7  
8  
9

S-CSCF find out that it is not E.164 but a logical name and gets FQDN of I-CSCF from the logical name.

**ROUTING with IMS E.164:**

1  
2  
3b  
4  
5a  
6  
7  
8  
9

S-CSCF find out that it is E.164 and routes the call to a BGCF in the own network.

BGCF in the target network finds out that it is IMS E.164 and routes the call to I-CSCF.

**ROUTING with non IMS E.164:**

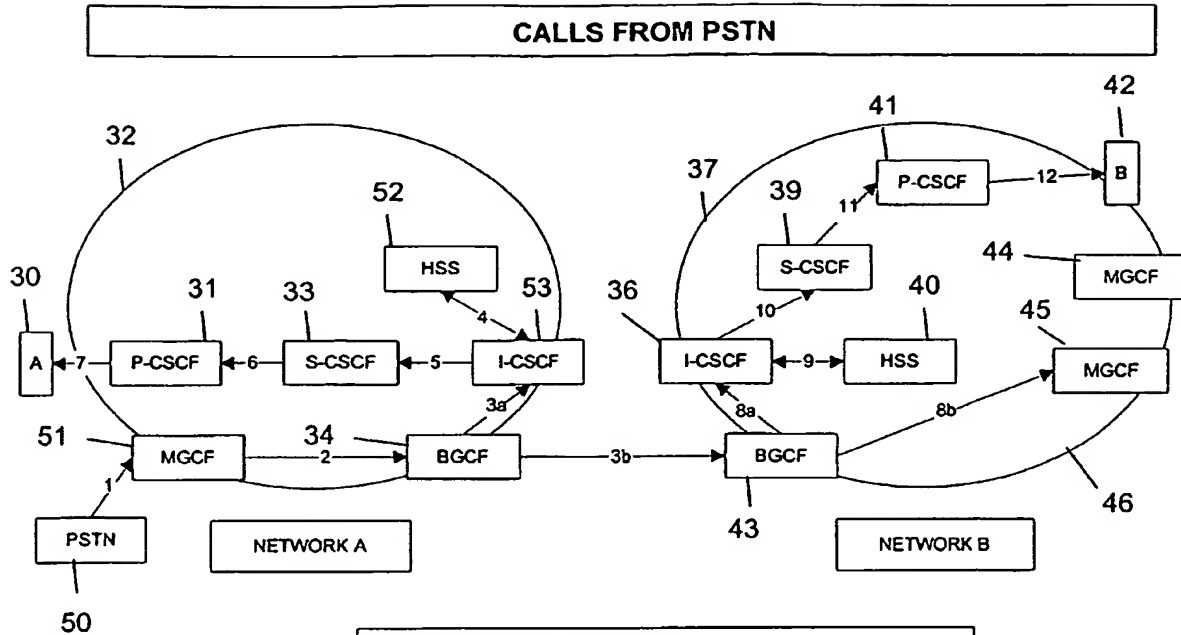
1  
2  
3b  
4  
5b

S-CSCF find out that it is E.164 and routes the call to a BGCF in the own network.

BGCF in the target network finds out that it is not IMS E.164 and routes the call to one of the own MGCFs.

FIG. 8



**ROUTING with IMS E.164 in the own**

- 1
- 2
- BGCF find out that I-CSCF takes care of the number.
- 3a
- 4
- 5
- 6
- 7

**ROUTING with IMS E.164 to another**

- 1
- 2
- BGCF find out that BGCF in another network takes care of the number.
- 3b
- BGCF find out that I-CSCF takes care of the number.
- 8a
- 9
- 10
- 11
- 12

**ROUTING with non IMS E.164 to another**

- 1
- 2
- BGCF find out that BGCF in another network takes care of the number.
- 3b
- BGCF find out the MGCF that takes care of the number.
- 8b

**FIG. 9**

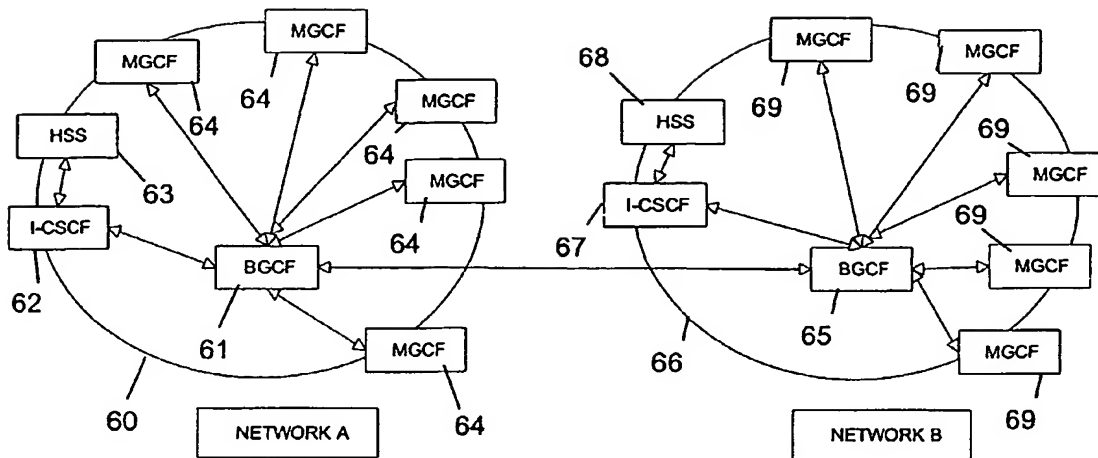


FIG. 10

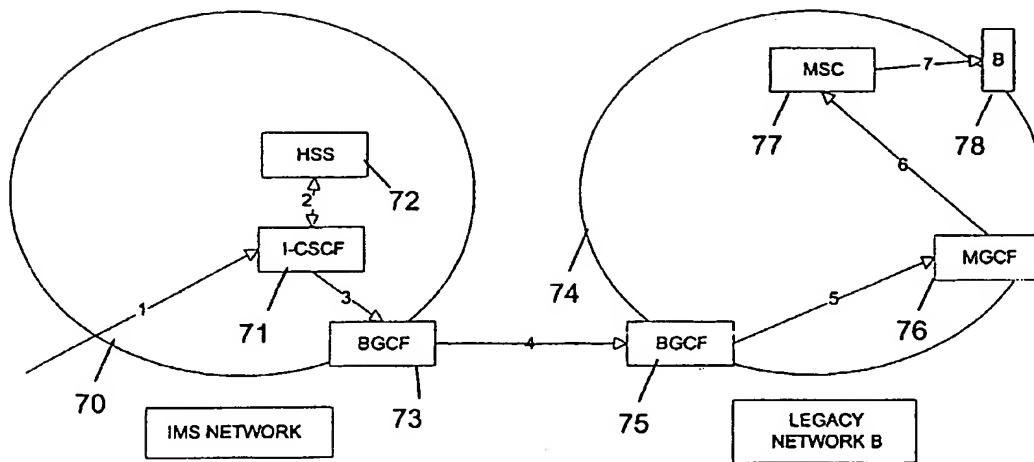


FIG. 11



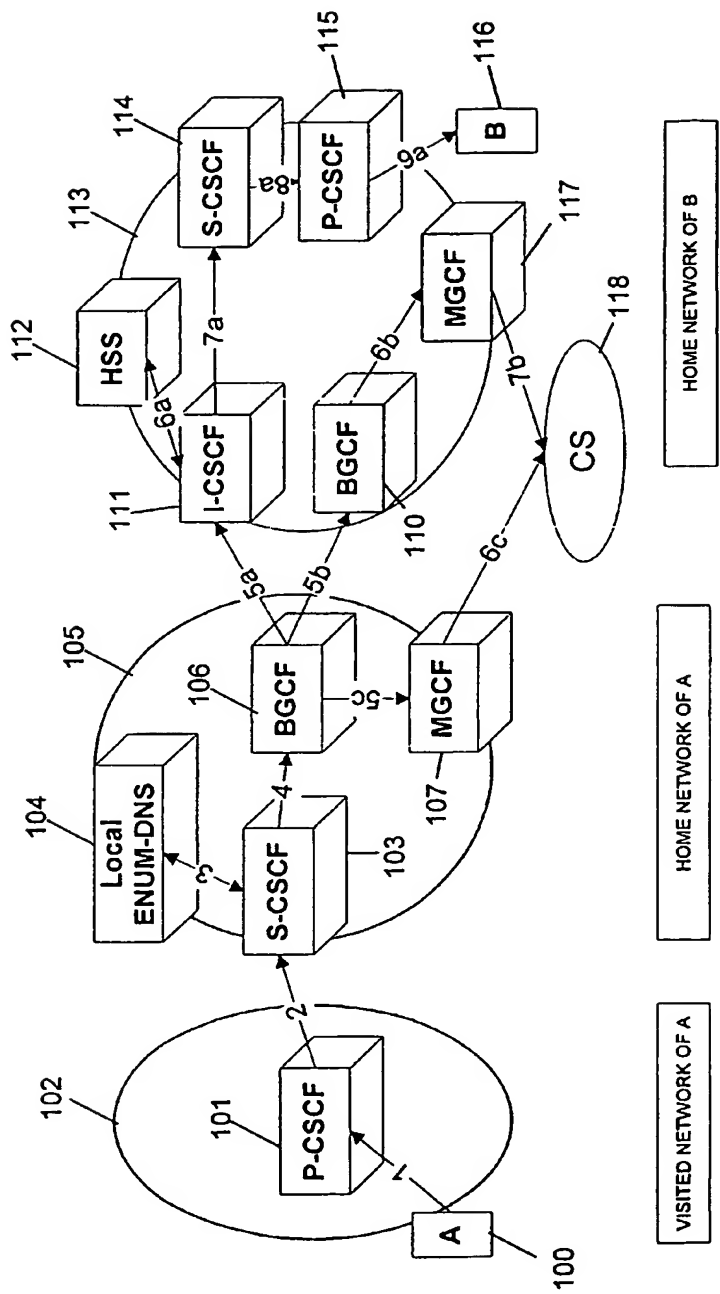


FIG. 13

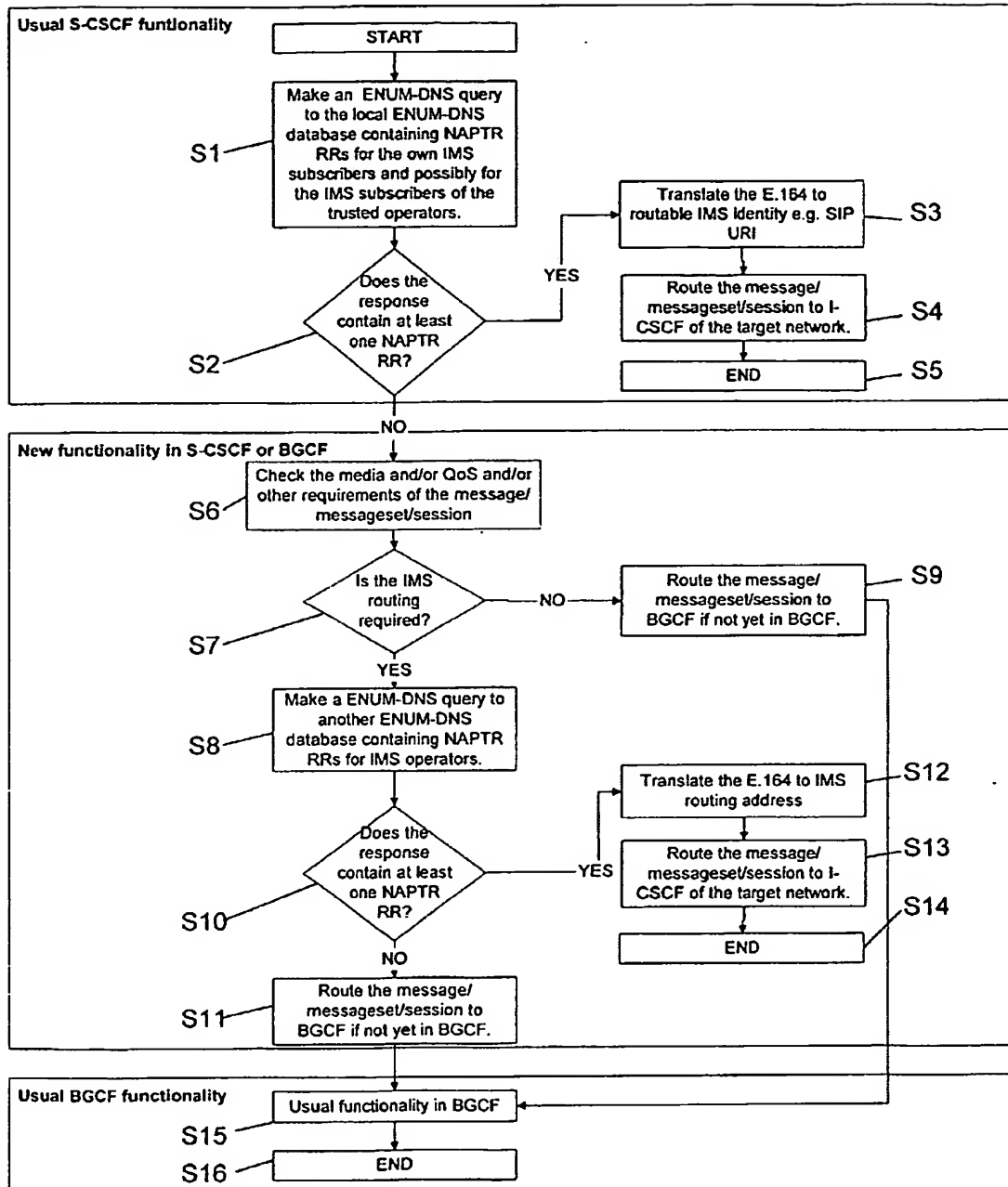


FIG. 14

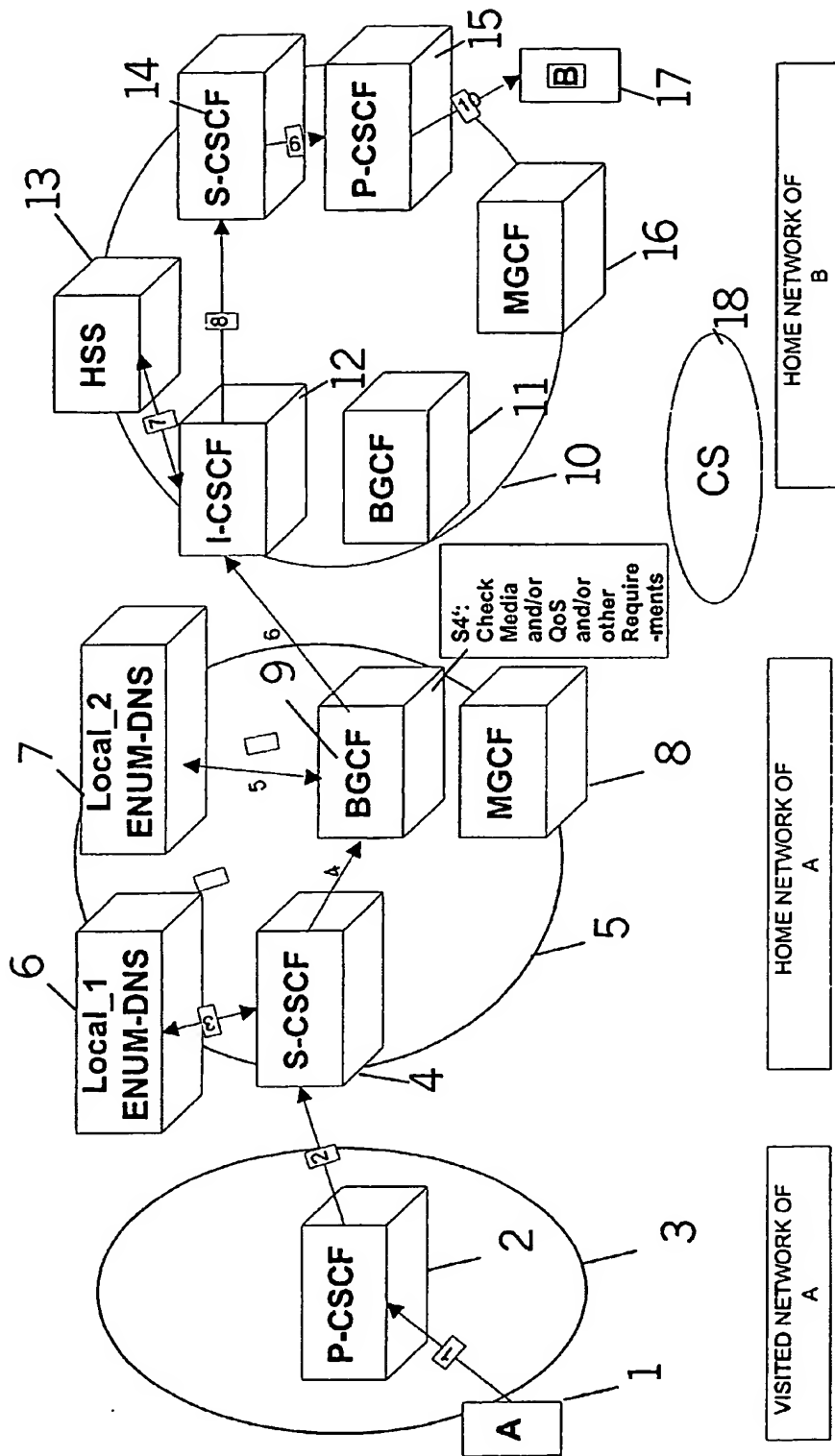


FIG. 15